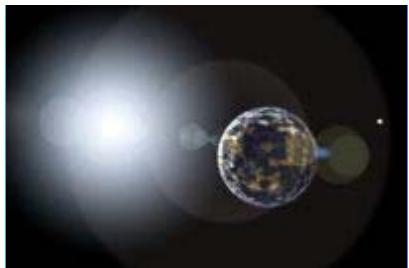


# Spectral Type A - Sirius

## Stellar Data



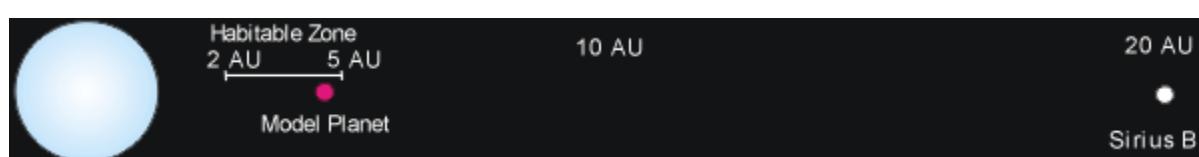
Type of Star:	White Star
Spectral Class:	A1V
Distance:	8,6 Lightyears
Luminosity:	24 L
Mass:	2,2 Solar Masses
Surface Temperature:	10.000 K
Main Sequence Lifetime:	1 Billion Years

## The Environment of Sirius

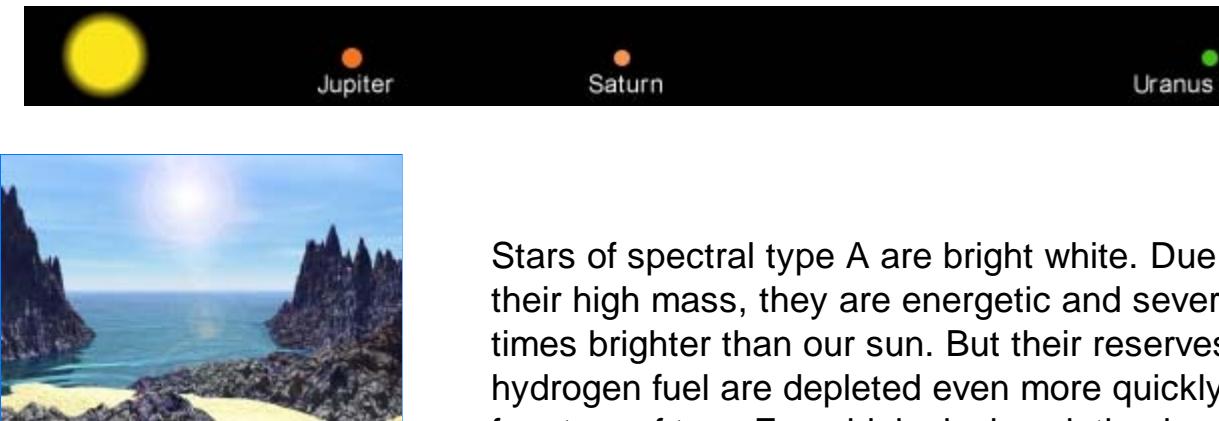
Habitable Zone:	2 - 5 AU
Zone of Stable Planetary Orbits:	Until 10 AU
Known Companions:	White Dwarf Sirius B (Least Distance 20 AU, 1 Orbit in 49,9 Years)

## Comparison to Solar System

Sirius



Sun



Our model planet is a bright, young world.

Stars of spectral type A are bright white. Due to their high mass, they are energetic and several times brighter than our sun. But their reserves of hydrogen fuel are depleted even more quickly than for stars of type F, so biological evolution is severely restricted here.

The most prominent A-type star is Sirius. It is also the nearest star visible from Europe without a telescope. In winter and spring, Sirius is a cosmic lightfire hardly to be missed.

With an age of 300 million years, Sirius is still a very young star, but this time would have been more than sufficient for terrestrial planets to form. Due to its enormous brightness, the habitable zone of Sirius would be very broad, ranging from 2 AU to about 5 AU. So Sirius might be orbited by three or even four habitable worlds. Of course, the term *habitability* might mean creatures of Archaean times as well as complex vertebrates. The latter would have no chance at Sirius, however.

Any planet of Sirius would be a young world, covered by warm, shallow oceans. If any continents could have formed already, they would be small, uneroded and volcanic. The planet would be shielded by a thick and very humid atmosphere, and all this scene would be dominated by a bright, violent sun. At the bottom of the oceans, protected from the sterilizing ultraviolet light, simple forms of bacterial life may find their niche, nourished by hydrothermal vents from the planet's interior. Any future explorers to this world should not forget their Sirius glasses.

Any kind of life on our model planet will die before it ever had a chance to grow. Sirius will leave the main sequence in only 700 million years at best, destroying all the planets it may have. For this reason, stars of type A are routinely excluded from the search for extraterrestrial life.

BENEST D., 1989: Planetary orbits in the elliptic restricted problem. II - The Sirius system. *Astronomy and Astrophysics*, 223, 361

BENEST D., 1993: Stable planetary orbits around one component in nearby binary stars. II *Celestial Mechanics*, 56, 45

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